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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/664,403	09/18/2000	Ross H. Cornell	05997.0019-00	4008

22852 7590 08/04/2003

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EXAMINER

AKERS, GEOFFREY R

ART UNIT	PAPER NUMBER
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3624

DATE MAILED: 08/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/668403

Applicant(s)

Cornell

Examiner

Alan, 9

Art Unit

3624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 8/21/03.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 7-10, 27-70 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-10, 27-70 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 6) ☐ Other:

Art Unit: 3624

## **DETAILED ACTION**

### ***Response to Amendment***

1. This action is issued in response to applicant's Amendment A(Paper #7) filed 4/21/03.
2. Claims 1-6, 11-26 were cancelled. Claims 7,27,28,31,45,46 were amended.New claims 49-70 were added.
3. Claims 7-10,27-70 are pending.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 7-10,27-70 are rejected under 35 USC 103(a) as unpatentable over Frankel(US Pat. No: 6,070,151) in view of Lange(US Pat. No: 6,321,212) in view of Boudoukh(1996)("Pricing Mortgage-Backed Securities in a Multifactor Interest Rate Environment: A Multivariate Density Estimation Approach") in view of Chen(1995)("The Relevance of Interest Rate Processes in Pricing Mortgage-Backed Securities") in view of Cahill(5/99)("A Closer Look at Mortgage-Backed Securities") and further in view of "An Investor's Guide to Mortgage Securities"(IGMS).
6. As per claims 7-10,27-70 Frankel teaches a method for the creation of structured interest rate securities(Abstract)(Figs 2-8). Boudoukh teaches analyzing and pricing of mortgage backed

Art Unit: 3624

securities(pages 4-12).Chen teaches term structure fitting and cash flows due to prepayments(p 323-328).Cahill teaches duration instabilities and negative convexities(p 2).Lange teaches hedging strategies and floating rate characteristics(Abstract)(Fig 9B) including market risk, credit risk, event risks in derivatives trading and pricing(col 3 lines 17-col 5 line 42)(col 6 line 48-col 14 line 25) as well as a data processing system(Fig 1)(Fig 2).IGMS teaches delineating the risks associated with each of the classes of mortgage securities(pages 1-2).It would have been obvious to one skilled in the art at the time of the invention to combine Frankel in view of Lange to teach part of the disclosure. The motivation to combine is to teach a method for statistical diversification of credit risk through the mutualization of multiple derivative counterparties and creating a market for derivatives trading as enunciated by Lange(col 13 lines 41-53).It also would have been obvious to one skilled in the art at the time of the invention to combine Frankel in view of Lange and further in view of Boudoukh to teach part of applicant's disclosure. The motivation to combine is to teach a method for statistical diversification in the analysis of mortgage backed securities as enunciated by Boudoukh(p 4).It would also have been obvious to one skilled in the art at the time of the invention to combine Frankel in view of Lange in view of Boudoukh and further in view of Chen to teach the part of the above. The motivation to combine is to teach a method for statistical diversification in the analysis of mortgage backed securities and the sensitivities of mortgage backed securities to interest rate fluctuations as enunciated by Chen(p 323-328).It would have been obvious to one skilled in the art at the time of the invention to combine Frankel in view of Lange in view of Boudoukh in view of Chen and further in view of

Art Unit: 3624

Cahill to teach part of the disclosure. The motivation to combine is to teach a method for statistical diversification optimization method in light of market instabilities as enunciated by Cahill(p 2).Finally, it would have been obvious to one skilled in the art at the time of the invention to combine Frankel in view of Lange in view of Boudoukh in view of Chen in view of Cahill and further in view of IGMS. The motivation to combine is to teach a method for statistical diversification and combination of securities in the mortgage backed market that is optimum through comparison and evaluation of the class characteristics and risks as delineated by IGMS(Pages 1-2).

***Response to Arguments***

7. Applicant's arguments with respect to amended claims 7-10, 27-70 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

8. Applicant's amendment necessitated the additional new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR

Art Unit: 3624

1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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9. Any questions concerning this communication should be addressed to the examiner of record, Dr. Geoffrey Akers, P.E., who can be reached between 6:30 AM and 5:00 PM Monday through Friday at 703-306-5844. If attempts to contact the examiner are unsuccessful, the examiner's superior, Mr. Vincent Millin, SPE, may be telephoned at (703)-308-1065.

The fax number for Formal or Official faxes and Draft or Informal faxes to Technology Center 3600 or this Art Unit is (703)-308-3687.

GRA

July 29, 2003

GEOFFREY R. AKERS, P.E.  
PRIMARY EXAMINER